



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,040	07/10/2001	Daniel L. Moore	18235-05005	9909

20306 7590 01/12/2005

MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE
32ND FLOOR
CHICAGO, IL 60606

EXAMINER

WILLIAMS, LAWRENCE B

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/903,040

Applicant(s)

MOORE, DANIEL L.

Examiner

Lawrence B Williams

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 17-42 and 44-54 is/are rejected.
- 7) ☒ Claim(s) 16 and 43 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Specification

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 11 recites the limitation "said plurality of multimedia data" in line 2. There is insufficient antecedent basis for this limitation in the claim.

5. Claim 12 is objected to because of the following informalities: Claim 12 recites the limitation "said plurality of multimedia data" in line 2. There is insufficient antecedent basis for this limitation in the claim

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2634

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-10, 12, 17-23, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al. (US Patent 5,784,597) in view of Nuber et al. (US Patent 5,703,877).

(1) With regard to claim 1, Chiu et al. discloses in Fig. 1, a method to synchronize transmission of a plurality of data between a first source device and a destination device, said method comprising: transmitting said plurality of data in a first frequency band from said first source device; receiving said plurality of data into a buffer at said destination device, transmitting a plurality of synchronization pulses in a second frequency band from a second source device, receiving said plurality of synchronization pulses at said destination device (abstract; col. 4, lines 2-29). Though Chui et al. does not disclose receiving a sequence number at said destination device to determine when said destination device will access said plurality of data from said buffer, he does teach devices accessing a particular section or buffer at a different form the other devices (col. 21, lines 45-63).

However, Nuber et al. discloses receiving a sequence number (Time-Stamp) at a destination device to determine when the destination device will access a plurality of data from a buffer (col.2, lines 20-29).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Nuber et al. to modify the invention of Chiu et al. as a known method of decoding digital audio data (col. 4, lines 12-25).

(2) With regard to claim 2, Nuber et al. also discloses the method further comprising extracting a sequence number from the plurality of synchronization pulses received by said

destination device to determine when and in which order said destination device access the plurality of data from said buffer (col. 2, lines 20-29).

(3) With regard to claim 3, though Chiu et al does not explicitly teach wherein the first source device and the second destination device are connected in a network by a power line, he does teach the invention to provide high-speed two-way video, audio, and data communications on a network (col. 3, line 53- col. 4, line 12) which would inherently encompass a network connected by a power line.

(4) With regard to claim 4, Chiu et al. also discloses wherein said first frequency band is at a higher frequency than said second frequency band (col. 7, lines 1-18).

(5) With regard to claim 5, though Chiu et al does not explicitly disclose wherein the first frequency band is at a lower frequency than the second frequency band, he does teach that multiple alternative embodiments could be readily realized by those skilled in the art which would inherently include using a lower frequency for the first band which would not take away from the purpose of the invention.

(6) With regard to claim 6, Chiu et al. also discloses wherein the first source device and second source device are the same device (claims 1-2).

(7) With regard to claim 7, Nuber et al. et al also discloses wherein the plurality of synchronization pulses adjusts a clock signal used by the destination device (col. 4, lines 28-53).

(8) With regard to claim 8, Nuber et al. also discloses in Fig. 3, wherein the plurality of synchronization pulses adjusts a phase-locked-loop (PLL) in the destination device.

(9) With regard to claim 9, Chiu et al. also discloses in Fig. 1, wherein the plurality of synchronization pulses is transmitted to said destination device by a transmission media selected

from a group consisting of: a pair of wires, a double pair of wires, a coaxial cable, radio transmission, infrared transmission, one optical fiber, and two optical fibers.

(10) With regard to claim 10, Chiu et al. also discloses wherein the plurality of synchronization pulses and the plurality of data are transmitted using one modulation method (col. 5, lines 55-65; col. 6, lines 25-31).

(11) With regard to claim 12, claim 12 inherits all limitations of claim 10 above. Furthermore, Chui et al. also discloses wherein said plurality of synchronization pulses and said plurality of multimedia data are transmitted using a modulation method selected from a group of modulation methods consisting of: QAM, CODFM, DFM, PSK, BPSK, or QPSK.

(12) With regard to claim 15, Nuber et al. also discloses wherein the plurality of data has an embedded sequence number (col. 8, lines 7-44).

(13) With regard to claim 17, claim 17 inherits all limitations of claim 1 above. Furthermore, Chui et al. also discloses wherein the plurality of data includes audio data (col. 3, lines 53-55).

(14) With regard to claim 18, claim 18 inherits all limitations of claims 1 and 2 above.

(15) With regard to claim 19, though Chiu et al. does not explicitly teach wherein the first source device and the second destination device are connected in a network by a power line, he does teach the invention to provide high-speed two-way video, audio, and data communications on a network (col. 3, line 53- col. 4, line 12) which would inherently encompass a network connected by a power line.

(16) With regard to claim 20, claim 20 inherits all limitations of claims 18 and 6 above.

Art Unit: 2634

(17) With regard to claim 21, claim 21 inherits all limitations of claims 18 and 4 above.

(18) With regard to claim 22, claim 22 inherits all limitations of claims 18 and 5 above.

(19) With regard to claim 23, claim 23 inherits all limitations of claims 18 and 10 above.

(20) With regard to claim 26, Nuber et al. also discloses wherein said plurality of data has an embedded sequence number, which said destination device can extract to determine when to access said plurality of data from said buffer (col. 8, lines 7-44).

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al. (US Patent 5,784,597) in combination with Nuber et al. (US Patent 5,703,877) as applied to claim 10 above, and in further view of Orriss et al. (GB 2 373 692 A).

As noted above, Chiu et al. (US Patent 5,784,597) in combination with Nuber et al. (US Patent 5,703,877) discloses all limitations of claim 10 above. They do not however disclose wherein the plurality of synchronization pulses and plurality of data are transmitted using orthogonal differential frequency (OFDM) modulation, though Chui et al. does teach that his invention could be done in alternate embodiments which would inherently encompass using a OFDM transmitter rather than the preferred embodiment using a QPSK receiver (col. 6, lines 32-43).

However, Orriss et al. teaches an OFDM receiver wherein the plurality of synchronization pulses and plurality of data are transmitted using orthogonal differential frequency (OFDM) modulation (abstract; claims 1, 2).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Orriss et al. to modify the invention of Chui et al. in

Art Unit: 2634

combination with Nuber et al. as a known method of decreasing access time and to decrease the processing power used in the system (pg. 3, lines 6-23).

8. Claims 13, 24 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al. (US Patent 5,784,597) in combination with Nuber et al. (US Patent 5,703,877) as applied to claims 1, 18 and 27 above, and in further view of Kubista (US Patent 6,721,798 B1).

(1) With regard to claim 13, claim 13 inherits all limitations of claim 1 above. As noted above, Chiu et al. in combination with Nuber et al. disclose all limitations of claim 1 above. They do not however teach wherein the plurality of synchronization pulses is transmitted with a different modulation from a modulation used to transmit the plurality of data.

However, Deluca et al. teaches a communication system wherein the plurality of synchronization pulses is transmitted with a different modulation from a modulation used to transmit the plurality of data (col. 4, lines 1-4; col. 10, lines 36-57).

Therefore it would have been obvious to one skilled in the art to incorporate the teachings of Deluca et al. a proven method of communicating independent messages/data simultaneously (col. 2, lines 21-30).

(2) With regard to claim 24, claim 24 inherits all limitations of claims 18 and 13 above.

(3) With regard to claim 40, claim 40 inherits all limitations of claims 27 and 13 above.

9. Claims 14, 25 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al. (US Patent 5,784,597) in combination with Nuber et al. (US Patent 5,703,877) as

Art Unit: 2634

applied to claims 1, 18 and 27 above, and in further view of Mazzali et al. (Optical PPM Generator by Direct-Frequency Shifting).

(1) With regard to claim 14, as noted above Chiu et al. in combination with Nuber et al. disclose all limitations of claims 14. They do not however disclose wherein the plurality of synchronization pulses is transmitted without modulation. However, Mazzali et al. teaches synchronization pulses transmitted without modulation (pg. 191).

It would have been obvious to one skilled in the art to incorporate the scheme of Mazzali et al. as a method of a reliable scheme for pulse position control and detection.

(2) With regard to claim 25, claim 25 inherits all limitations of claims 18 and 14 above.

(3) With regard to claim 41, claim 41 inherits all limitations of claims 27 and 14 above.

10. Claims 27-34, 36-37, 39, 42, 44-46, 48-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al. (US Patent 5,784,597) in view of Nuber et al. (US Patent 5,703,877).

(1) With regard to claim 27, Chiu et al. discloses in Fig. 1, a deterministic network (100) to synchronize transmission of a plurality of data between a first source device (103) and a destination device (105a), said deterministic network comprising; a first source (103) device to transmit said plurality of data; a second source device to transmit a plurality of synchronization pulses (103"), a destination device to receive said plurality of synchronization pulses (105a-h), including a buffer (Fig. 8c; 309) to receive said plurality of data, a first transmission medium (107a, b) to transmit said plurality of data in a first frequency band from said first source device to said destination device, and a second transmission medium (111, 111a) to transmit said

Art Unit: 2634

plurality of synchronization pulses in a second frequency band from said second source device to said destination device (abstract; col. 4, lines 2-29). Though Chui et al. does not disclose a controller to calculate a sequence number to determine when said controller will access said plurality of data, he does teach devices accessing a particular section or buffer at a different form the other devices initialized by a microprocessor (303) (col. 21, lines 45-63).

However, Nuber et al. discloses inserting time-stamps into a transport stream to be used by a destination device (decoder) to determine when the destination device will access a plurality of data from a buffer (col.2, lines 20-29).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Nuber et al. to modify the invention of Chiu et al. as a known method of decoding digital audio data (col. 4, lines 12-25).

(2) With regard to claim 28, Nuber et al. also discloses wherein said destination device determines said sequence number from said plurality of synchronization pulses (col. 2, lines 20-29).

(3) With regard to claim 29, Chui et al. also discloses wherein the first transmission medium and second transmission medium are the same medium (col. 7, lines 1-18).

(4) With regard to claim 30, though Chiu et al. does not explicitly teach wherein the first source device and the second destination device are connected in a network by a power line, he does teach the invention to provide high-speed two-way video, audio, and data communications on a network (col. 3, line 53- col. 4, line 12) which would inherently encompass a network connected by a power line.

(5) With regard to claim 31, Chiu et al. also discloses wherein the first source device and second source device are the same device (claims 1-2).

(6) With regard to claim 32, Chiu et al. also discloses wherein said first frequency band is at a higher frequency than said second frequency band (col. 7, lines 1-18).

(7) With regard to claim 33, though Chiu et al does not explicitly disclose wherein the first frequency band is at a lower frequency than the second frequency band, he does teach that multiple alternative embodiments could be readily realized by those skilled in the art which would inherently include using a lower frequency for the first band which would not take away from the purpose of the invention.

(8) With regard to claim 34, Nuber et al. et al also discloses wherein the plurality of synchronization pulses adjusts a clock signal used by the destination device (col. 4, lines 28-53).

(9) With regard to claim 35, Nuber et al. also discloses in Fig. 3, wherein the plurality of synchronization pulses adjusts a phase-locked-loop (PLL) in the destination device.

(10) With regard to claim 36, Chiu et al. also discloses in Fig. 1, wherein the plurality of synchronization pulses is transmitted to said destination device by a transmission media selected from a group consisting of: a pair of wires, a double pair of wires, a coaxial cable, radio transmission, infrared transmission, one optical fiber, and two optical fibers.

(11) With regard to claim 37, Chiu et al. also discloses wherein the plurality of synchronization pulses and the plurality of data are transmitted using the same modulation method (col. 5, lines 55-65; col. 6, lines 25-31).

(12) With regard to claim 39, claim 39 inherits all limitations of claim 27 above. Furthermore, Chui et al. also discloses wherein said plurality of synchronization pulses

Art Unit: 2634

and said plurality of multimedia data are transmitted using a modulation method selected from a group of modulation methods consisting of: QAM, CODFM, DFM, PSK, BPSK, or QPSK.

(13) With regard to claim 42, Nuber et al. also discloses wherein the plurality of data has an embedded sequence number (col. 8, lines 7-44).

(14) With regard to claim 44, Chiu et al. teaches the network comprising an error detecting circuit in the destination device (col. 13, lines 25-64).

(15) With regard to claim 45, claim 45 inherits all limitations of claim 27 above. Furthermore, Chui et al. also discloses wherein the plurality of data includes audio data (col. 3, lines 53-55).

(16) With regard to claim 46, claim 46 inherits all limitations of claim 27 above. Furthermore, Chui et al. also discloses wherein the plurality of data includes video data (col. 3, lines 53-55).

(17) With regard to claim 47, Chui et al. also discloses in Fig. 1, wherein said first transmission medium and second transmission medium comprise a communication network (col. 3, lines 53-55), even though Chiu et al. is silent as to the first source device and the second source device comprising an audio controller and said destination device comprises one or more speakers coupled to said communication network, he does disclose the communication network for two-way audio which would inherently require the use of some type of audio controller in the source devices and he also discloses destination devices as video-on-demand, interactive television (col. 5, lines 48-55) which again would inherently include one or more speakers connected to the network.

(18) With regard to claim 48, claim 48 inherits all limitations of claim 27. Furthermore, Chui et al. discloses wherein the destination device further includes one or more demodulators demodulating said plurality of data and said plurality of synchronization pulses (col. 4, lines 39-40; 50-51).

(19) With regard to claim 49, Nuber et al. also discloses wherein said destination device further includes a detector extracting said sequence number from said plurality of synchronization pulses (col. 4, lines 28-67).

11. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al. (US Patent 5,784,597) in combination with Nuber et al. (US Patent 5,703,877) as applied to claim 37 above, and in further view of Orriss et al. (GB 2 373 692 A).

As noted above, Chiu et al. (US Patent 5,784,597) in combination with Nuber et al. (US Patent 5,703,877) discloses all limitations of claim 37 above. They do not however disclose wherein the plurality of synchronization pulses and plurality of data are transmitted using orthogonal differential frequency (OFDM) modulation, though Chui et al. does teach that his invention could be done in alternate embodiments which would inherently encompass using a OFDM transmitter rather than the preferred embodiment using a QPSK receiver (col. 6, lines 32-43).

However, Orriss et al. teaches an OFDM receiver wherein the plurality of synchronization pulses and plurality of data are transmitted using orthogonal differential frequency (OFDM) modulation (abstract; claims 1, 2).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Orriss et al. to modify the invention of Chui et al. in combination with Nuber et al. as a known method of decreasing access time and to decrease the processing power used in the system (pg. 3, lines 6-23).

12. Claims 50-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al. (US Patent 5,784,597) in combination with Nuber et al. (US Patent 5,703,877) as applied to claims 1 and 7 above, and in further view of Kubista (US Patent 6,721,798 B1).

(1) With regard to claim 50, claim 50 inherits all limitations of claims 1 and 7 above as claim 50 merely discloses a method of the synchronization (claims 1, 7) implemented by a computer. As noted above, Chui et al. in combination with Nuber et al. disclose all limitations of claims 1 and 7. They do not however teach the method implemented by computer. However, Kubista teaches a computer program for handling data transmission within a network. It would have been obvious to one skilled in the art to that the mechanism or aspect of the invention could be distributed in the form of computer usable medium of instruction in a variety of forms.

(2) With regard to claim 51, claim 51 inherits all limitations of claim 50 above.

(3) With regard to claim 52, claim 52 inherits all limitations of claim 51 above.

Furthermore, though Chiu et al does not explicitly disclose wherein the second frequency band is at a higher frequency than the first frequency band, he does teach that multiple alternative embodiments could be readily realized by those skilled in the art which would inherently include using a lower frequency for the first band which would not take away from the purpose of the invention.

(4) With regard to claim 53, Nuber et al. also discloses in Fig. 3, wherein at least one of said one or more destination devices comprises a phase-locked-loop (PLL) and said plurality of synchronization pulses adjusts said PLL.

(5) With regard to claim 54, Chui et al. also discloses wherein the plurality of data is selected from a group consisting of audio data, visual data, and audio-visual data (col. 3, lines 53-55).

Allowable Subject Matter

13. Claims 16, 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter: the instant application discloses a method and apparatus for synchronizing transmission of data. The prior art fails to teach a method or apparatus comprising “receiving the plurality of synchronization pulses by a global positioning satellite (GPS) receiver in the destination device” as disclosed in claims 16 and 43.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) McDade et al. Discloses in US Patent 5,889,515 Rendering an Audio-Visual Stream Synchronized By a Software Clock in a Personal Computer.

b.) Wollum discloses in US Patent 3,618,037 Digital Data Communication Multiple Line Control.

c.) Kim et al. discloses in US 2002/0091861 A1 Modular-Type Home Gateway System Including ADSL Controller and HOMEPNA Controller.

d.) Mizuguchi et al. discloses in US 2001/0006525 A1 a System, Method and Apparatus for Data Transmission.

e.) DeLuca et al. discloses in US Patent 5,051,993 Mixed Modulation Level Communication System.

f.) Perlman discloses in US 2002/0184637 A1 System and Method for Improved Multi-Stream Multimedia Transmission and Processing.

g.) Menon et al. discloses in US Patent 6,452,974 B1 Synchronization of Related Audio and Video Streams.

h.) Prasad et al. discloses in US Patent 6,269,122 B1 Synchronization of Related Audio and Video Streams.

i.) McDade et al. discloses in US Patent 5,889,515 Rendering an Audio-Visual stream Synchronized by a Software Clock in a Personal Computer.

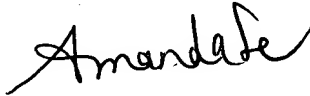
16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw
December 29, 2004


AMANDAT. LE
PRIMARY EXAMINER